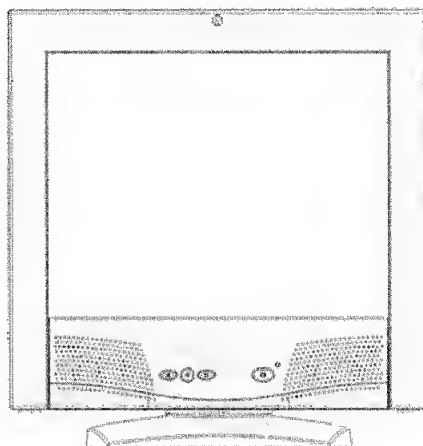


HITACHI

COLOUR/COLOR LCD MONITOR

CML155XW V

User Manual



**READ THE INSTRUCTIONS INSIDE CAREFULLY.
KEEP THIS USER MANUAL FOR FUTURE REFERENCE.**

For future reference, record the serial number of your colour monitor.

SERIAL No. _____

The serial number is located on the rear of the monitor.

This monitor is ENERGY STAR® compliant when used with a computer equipped with VESA DPMS.

The ENERGY STAR® emblem does not represent EPA endorsement of any product or service.

As an ENERGY STAR® Partner, Hitachi, Ltd. has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.



Limited Warranty for USA Customers Only

Hitachi America, Ltd. warrants our Hitachi CRT color monitor to be free from defects in material and workmanship for 36 months from the date you purchased it if your purchase was made prior to 1/31/01 or 60 months if your purchase was made after 1/31/01 from your authorized Hitachi America, Ltd. dealer.

If you purchase a Hitachi Liquid Crystal Display (LCD) color monitor, Hitachi provides a warranty of 36 months for the panel and 12 months for the backlight if purchased before 1/31/01 or 36 months for both panel and backlight if purchased after 1/31/01. In the event of a defect during this 12 month, 36 month or 60 month period, Hitachi America, Ltd. will, at its option, repair or replace the monitor at no charge except as set forth below. If proof of purchase cannot be provided by owner, the warranty period will start to run from the date of manufacture.

Hitachi America, Ltd. may repair your monitor with new or reconditioned parts or replace it with a new or reconditioned monitor of the same or similar kind, and any replaced monitors or parts become Hitachi America, Ltd.'s property.

Exclusions from this warranty: It is normal for Cathode Ray Tube (CRT) monitors and LCD display backlights to decrease in brightness as they age. This is a natural process in CRTs & LCDs due to the degradation of the LCD backlight and the degradation of the CRT phosphors that create the image and is not covered by this warranty. This warranty excludes decreased image clarity or reduced brightness due to natural aging of the monitor/display. In addition, this warranty does not cover phosphor burn. Phosphor burn can occur when a monitor is left with one static image for extended periods of time during which the image may become burned into the phosphors.

This limited warranty does not cover damage occurring in shipping or in storage after you purchase the monitor or damage caused by abuse, accident, disaster, misuse, mishandling, mispackaging or shipping, improper installation, unauthorized repair or modification, or failure to follow the manufacturer's instruction with respect to the proper handling, operation, installation, service and maintenance of the monitor.

To obtain warranty service, call 1-800-536-6721 to obtain a return authorization and the location of your Hitachi service center or return the monitor to the dealer from whom you bought it (subject to that dealers' return policy). If you choose to ship the monitor rather than delivering it in person, you must assume the risk of damage or loss in transit. You must also use the original shipping container (or equivalent packaging), pay shipping charges, and enclose a copy of the proof of purchase date with the monitor. For additional information, please write to:

Hitachi America, Ltd.
200 Lowder Brook Drive, Suite 2200, Westwood, MA 02090

NEVER open the monitor cabinet. If the monitor is not operating properly, contact Hitachi America Ltd. service center (Call 1-800-536-6721).

Do not open the monitor housing under any circumstances. By opening the monitor housing you will expose yourself to high voltage and possible severe electrical shocks and void all warranties.

ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS MONITOR IS LIMITED TO THE 12, 36 or 60 MONTH DURATION OF THIS WRITTEN WARRANTY, AS APPLICABLE. ALL WARRANTIES SET FORTH IN THIS WARRANTY ARE LIMITED TO 12, 36 OR 60 MONTHS FROM THE DATE OF PURCHASE. NO WARRANTIES WHATSOEVER WILL COVER THIS MONITOR BEYOND THE STATED 12, 36 OR 60 MONTHS. HOWEVER, SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS MONITOR IS DEFECTIVE, YOUR ONLY REMEDY IS REPAIR OR REPLACEMENT, AS DESCRIBED ABOVE. UNDER NO CIRCUMSTANCES WILL HITACHI AMERICA, LTD. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING ANY LOST SAVINGS, LOST PROFITS, OR ANY OTHER DAMAGES CAUSED BY THE USE OF THIS MONITOR OR INABILITY TO USE IT, EVEN IF THE DEALER OR HITACHI AMERICA, LTD. HAS BEEN ADVISED OF SUCH LIABILITY OR OTHER CLAIMS.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY HAVE OTHER RIGHTS WHICH VARY STATE TO STATE.

THIS WARRANTY APPLIES TO NEW, CURRENT, PRODUCTS ONLY AND DOES NOT APPLY TO PRODUCTS SOLD AFTER THEY ARE DISCONTINUED OR REFURBISHED.

For Canadian Customers only Warranty Policy

Hitachi Industrial Products are guaranteed to be free from defects in workmanship and material. If any failure, resulting from either workmanship or material defects should occur under normal and proper usage within the period stated hereunder from the original provable date of purchase, such failure should be repaired at no cost to the buyer for labor and parts if the defective product is brought to an AUTHORIZED HITACHI SERVICE CENTRE in Canada.

WARRANTY PERIOD

COMPUTER MONITOR

3 year parts and 3 year labour

WARRANTY DOES NOT COVER

1. Products received for repair without sales or delivery receipt showing date of purchase by original customer.
2. Damages caused by incorrect use, carelessness, unauthorized alteration, improper storage or unauthorized service or repairs.
3. Damages caused by fire, flood, lightning, vandalism, collision, acts of God, or other events beyond the control of Hitachi.

4. External parts such as cabinet.
5. Products purchased outside Canada.
6. Products used outside Canada.
7. In transit damage claims, improper handling by carrier or post offices.
8. Products or parts there of which have serial numbers removed, altered or defaced.
9. Damage defect or failure caused by, or resulting from, the operation of the unit by incorrect voltages.
10. The use of components that do not meet Hitachi specifications.
11. Products sold in Canada by another organization which is not authorized by HITACHI CANADA LTD
12. Picture tube damages resulting from extended exposure of the video characters.

IMPORTANT : This warranty is in lieu of all other warranties, guarantees or agreements whether expressed or implied and no person, dealer, or Company is authorized to change, modify, or extend its terms in any manner whatsoever.

Hitachi Canada Inc. shall not be responsible for any damages or loss of any kind attributed to the product rendered defective during usage, or attributed to incompatibility problems of any linked equipment including software.

NEVER open the monitor cabinet. If the monitor is not operating properly, contact Hitachi Service Center. DO NOT open the monitor housing under any circumstances. by opening the monitor housing you will expose yourself to high voltage and possible severe electrical shocks, and void all warranties.

HITACHI CANADA LTD.

For service, please call your Dealer or your 1-800-HITACHI.

TRONTO

6740 Campobello Road, Mississauga, Ont. L5N 2L8

Tel.: (905) 821-4545

Fax No.: (905) 821-1101

HITACHI

Colour/Color Monitor

CML155XW V

USER MANUAL

Congratulations on your selection of the HITACHI Colour Monitor.

Read the instructions inside carefully, and keep this user manual for future reference.

NOTE:

- * The information in this manual is subject to change without notice. The manufacturer assumes no responsibility for any errors that may appear in this manual.
- * The reproduction, transmission or use of this documents or contents is not permitted without express written authority.

TRADEMARK ACKNOWLEDGEMENT:

VGA is a registered trademark of International Business Machines Corporation.

VESA is a trademark of a nonprofit organisation, Video Electronics Standard Association.

ENERGY STAR[®] is a trademark of Environmental Protection Agency (EPA).

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Introduction

This latest LCD monitor has a 15-inch active matrix TFT (thin film transistor) liquid crystal display module. It is designed for use with any Windows®-based PC. The monitor's compact-sized design provides great space savings on your computer desk.

Features

Important features include:

- ⇒ Automatic configuration to the PC video settings with maximum XGA resolution.
- ⇒ Three control buttons plus OSD (on-screen display) for monitor settings adjustment and configuration with ease and instant feedback.
- ⇒ Support analog and digital video input for direct and immediate replacement of CRT displays.
- ⇒ Support s-video and composite video input for TV signal.
- ⇒ Build-in speakers, microphone and earphone jack.
- ⇒ A tilt feature to optimize viewing position.
- ⇒ An anti-glare coating on the panel to reduce the reflection of ambient light.
- ⇒ Flicker-free performance across all recommended video modes.
- ⇒ Support for high refresh rates up to 75 Hz.
- ⇒ VESA DDC2B Plug-and-Display compliant.
- ⇒ A Power-saving feature that is compatible with Microsoft® Windows
- ⇒ Compliance with Swedish MPR II guidelines for reduced electromagnetic emissions.
- ⇒ Compliance with TCO95.

Using this Display Safely

Common Safety Precautions

Please read carefully and make sure you fully understand the following safety precautions:

- Operations should be done according to instructions and procedures described in this manual.
- Make sure to heed all warnings displayed on the device and manual. Neglecting to do so may result in fire or damage the device.

Symbols

Safety notifications are presented as shown below. These are indicated by "Warning" and "Caution" in combination with a caution symbol (graphic symbol). Additionally, details are depicted within the graphic symbols.



Warning

This symbol is used to indicate a hazard that may result in death or grave injury.



Caution

This symbol is used to indicate a hazard that may result in minor injury or significant damage to the product



[Notice example 1] Shock Caution

This (Δ) symbol indicates that caution should be taken and within the triangle (Δ) is a picture depicting "Shock caution".



[Notice Example 2] Disassembly Prohibited

In the (⊘) barred circle is an action that must not be done and the picture in this (⊘) one depicts "Disassembly Prohibited".



[Notice Example 3] Unplug power Cord from Socket

In the (●) symbol is an action that should be taken. This (●) one is a picture depicting "Unplug Power Cord from Socket" and other mandatory actions.

Handling and Operation

Do not handle or operate in ways other than what is depicted in the manual. If there are any problems with the device, turn OFF the power, unplug the cord then notify the dealer where the product was purchased or call a service person.

Taking ample care

The cautions noted on the device and manual have been carefully considered. Even so, unforeseen incidents may happen. When operating the device, in addition to following instructions, takes ample care during handling and operation.

Warning



Abnormal heat, smoke, sounds or smells.

If anything abnormal should happen, turn OFF the power and unplug the power cord. Continued use in this condition may lead to electrical shock or fire. The area around the cord should be clear to allow the cord to be easily unplugged.



Repair, Modification, Disassembly

DO NOT attempt to repair, modify or disassemble the product. This may result in fire or electrical shock.



Air vents

- The air vents are to prevent the internal temperature from rising. Do not place items on or so that they block the air vents. Also do not place in racks where the air vents will be blocked. This will cause the internal temperature to rise and result in fire or malfunction.
- Do not place on racks that fix the display in leaning position. This will change the flow of air through the air vents and cause the internal temperature to rise resulting in fire or malfunction.



Placing Objects in Device

DO NOT put paper clips, pins, metallic objects or combustible items in the ventilation holes. Using the device in this condition may result in electrical shock or fire.



Removing the Case Cover

DO NOT remove the case cover. There are many high voltage parts inside and are very dangerous.



Placing Objects on the Device

DO NOT put flower vases, planters, vessels containing water, pins and paper clips or other metal items on the device. If anything should fall in, using the product in this condition may result in electrical shock.



Handling of the power cord

Use the power cord supplied with the product and be careful of the following during use. If handled improperly, the cord may be damaged resulting in electrical shock or fire.

Never place objects on it.

- DO NOT pull
- DO NOT apply pressure
- DO NOT fold
- DO NOT wrap

DO NOT use next to heating device



Plugging and Unplugging

- When plugging or unplugging the power cord in the socket, make sure to hold the plug. Pulling on the power cord may cause a partial breakage resulting in fire.
- When taking a holiday or vacation and leaving the device unused for prolonged periods, unplug the power cord. Leaving it plugged in may result in fire.
- When unplugging or plugging in the power cord, insure that your hands are dry. Handling with wet hands may result in electrical shock.



Poor Electrical Contact in Electric Plug, etc.

The following must be done to prevent bad contact in the electrical plug that may result in fire.

- Insure that electric plug is inserted in fully.
- Check to see if there is no dust accumulated on the plug before plugging in.
- DO NOT use a socket that is loose or wobbles.



Impact from Dropping

To not drop, bang or subject to physical shock. Using after such incidents may result in electrical shock or fire.



Power Usage

The usable voltage is 100-120V / 200-240VAC. DO NOT use any other voltage. This may result in electrical shock or fire.



Handling the AC adapter

- DO NOT wet or handle with wet hands. This may result in electrical shock.
- DO NOT use with devices other than this display. This may result in shock, fire, or damage to the device.
- DO NOT use or place in areas where heat accumulates. This may result in fire.



Multi-Tap Usage

DO not attach multiple extension plugs into one outlet. This may result in fire and overloading lines will activate the circuit breakers causing data loss or damage to the product.



Usage in Humid or Dusty Areas

DO NOT use or store in areas that are humid, dusty or have abundant moisture such as a bathroom. This may cause fire or electrical shock.



Moving to Areas of Different Temperature

Moving the device to areas that are very different in temperature may cause condensation on the outside and internally. Using the device in this condition may result in fire or electrical shock. Leave the device at the location for a few hours before using.



Aluminium Electrolysis Condenser

The electrolyte condenser used in the AC adapter has a limited life. If used past the life span (approximately 5 years), replace the AC adapter. Leakage or drying up of the electrolyte liquid may result in fire, electrical shock. This may also cause the device itself to malfunction.



Damage to the Display Unit

- Liquid may leak out of the display when damaged. DO NOT touch the liquid. If you should touch the liquid, wash your hands thoroughly with water. If the liquid should get into your mouth or eyes, gargle or rinse your eyes and promptly see a doctor for treatment.
- The display unit is made of glass. If the display unit should break, avoid handling the glass fragments. The fragments are dangerous and can cause injury.

CAUTION



Contact with Metal and Other Edges

When moving the computer be careful when coming in contact with the plastic and metal edges. It is possible to be injured.



Use in Unstable Places

DO NOT place on sloping or narrow areas that are unstable. The device may drop or fall and cause injury.



Display Cable

- Arrange the cables so that they are out of the way. If a cable is tripped on, it may cause injury and damage to the connected devices.
- DO NOT place heavy objects on the cable. Additionally, do not place objects that generate heat near the cables. The cable casing may break and cause damage to the devices that are connected.



Stand

- When adjusting the angle, hold the top left and right edges with both hands and move slowly. Using only one hand may cause it to fall.
- DO NOT place your hand near the stand when adjusting the LCD forward or back. Your fingers may get caught and cause injury.



Eyestrain

When continuously looking at the display while working, keep the work area lighted at 300 – 1000 Luxes. Additionally, for every hour of work, rest 10 to 15 minutes. Continuously looking at the display for prolonged periods will cause accumulated eye fatigue.



Disposal of this Product

When disposing of this product, confer with the dealer where this product was purchased or refer to laws of the local government or regulations regarding disposal.



Electronic Interference

If used in the vicinity of other electronic devices, they may interfere with each other's performances. Especially for devices such as radios and televisions, noise may enter their sound reception. If this should happen, try the following:

- Place in a location as far away from radios and televisions as possible.
- Change the facing of the antenna on the radio or television.
- Use a different electrical socket.



Storing the Plastic Bag

Keep the plastic bag used to wrap the display away from young children. The bag may cause suffocation.


FCC Statement Warning

WARNING : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

INSTRUCTIONS TO USERS : This equipment complies with the requirements of FCC (Federal Communication Commission) equipments provided that following conditions are met.

- (1) Power cord: Unshielded power cord must be used.
- (2) Video inputs: The input signal amplitude must not exceed the specified level.

Declaration of Conformity According to 47CFR, Part 2 and 15 for Class B Personal Computers and Peripherals; and / or CPU Boards and Power Supplies used with Class B Personal Computers:	
We:	<u>Hitachi America, Ltd.</u>
Located at:	<u>2000 Sierra Point Parkway, Brisbane, CA 94005-1835 U.S.A.</u>
Declarer under sole responsibility that the product identified herein, complies with 47CFR Part 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR § 2.909. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. The above named party is responsible for ensuring that the equipment complies with the standards of 47CFR § 15.101 to 15.109.	
Trade name:	<u>LCD Monitor</u>
Model Number:	<u>CML155XW / CML155XJ</u>
Signature of Party Responsible:	
Printed name of Party Responsible:	<u>Hideaki Kusaba</u>
Executed on (Date), at (Place):	<u>October 25, 2001, CA, U.S.A.</u>

CAUTION : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For the Customers in CANADA

NOTICE : This Class B digital apparatus complies with Canadian ICES-003.

For the Customers in the UK

THIS PRODUCT IS SUPPLIED WITH A TWO PIN MAINS PLUG FOR USE IN MAINLAND EUROPE. FOR THE UK PLEASE REFER TO THE NOTES ON THIS PAGE.

IMPORTANT FOR UNITED KINGDOM

WORDING FOR CLASS I EQUIPMENT INSTRUCTION BOOKS AND LABELS

The mains lead on this equipment is supplied with a moulded plug incorporating a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced, an ASTA or BSI approved BS 1362 fuse must be used of the same rating. If the fuse cover is detachable never use the plug with the cover omitted. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug. Fuse covers are available from your dealer.

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power outlets in your home or the cable is too short to reach a power outlet, then obtain an appropriate safety approved extension lead or consult your dealer.

Should it be necessary to change the mains plugs, this must be carried out by a competent person, preferably a qualified electrician.

If there is no alternative to cutting off the mains plug, ensure that you dispose of it immediately, having first removed the fuse, to avoid a possible shock hazard by inadvertent connection to the mains supply.

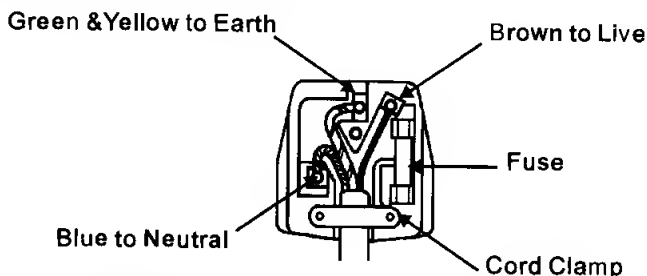
WARNING: THIS EQUIPMENT MUST BE EARTHED

IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Green and Yellow = Earth, Blue = Neutral, Brown = Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:



The wire which is coloured GREEN and YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol \oplus or coloured GREEN or GREEN and YELLOW.

The wire coloured BLUE must be connected to the terminal marked with the letter N or coloured BLUE or BLACK. The wire coloured BROWN must be connected to the terminal marked with the letter L or coloured BROWN or RED.

Installation

Please follow the instructions in this chapter to install your LCD Monitor.

Note: *Before connecting your display, first read through the instructions in this chapter and the safety precautions in the previous chapter.*

Unpacking the Display

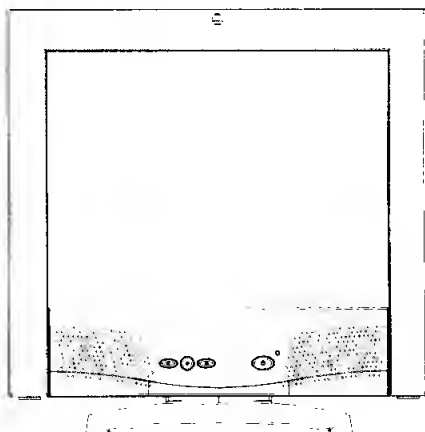
When you are unpacking the display, make sure that you have the following items:

- ⇒ The LCD monitor
- ⇒ AC power adapter with attached power cable
- ⇒ A power cord
- ⇒ Analog video signal cable
- ⇒ Digital video signal cable
- ⇒ S-video signal cable
- ⇒ CVBS signal cable
- ⇒ Audio-mic cable
- ⇒ Two-wire audio cable
- ⇒ The User's Manual

Note: *Place the display on a flat, sturdy surface. Choose an area free from excessive heat, moisture, and sunlight.*

Locations and Functions of Controls

There are three control buttons and one power button on the front panel of the display, as well as a LED for power status indication.



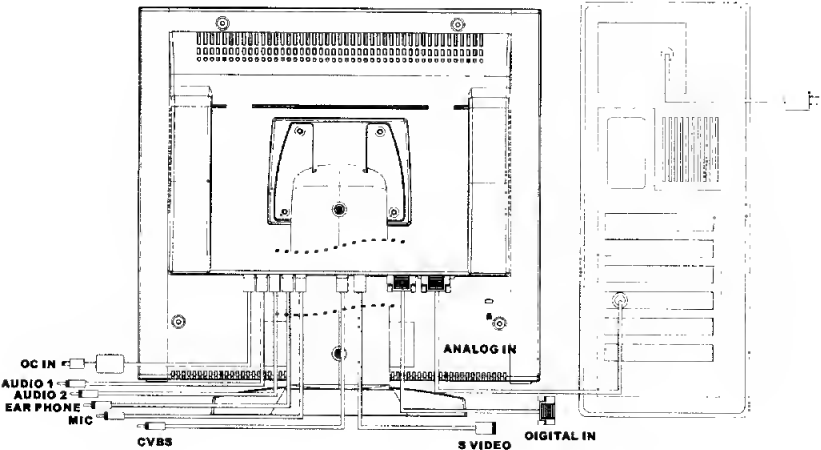
You will use the power button located at the lower right side of the front panel of your display to turn on and off the display.

The functions of the three control buttons, which are located at the lower middle-left side of the front panel of your display, are described as below:

Button	Function Description
Select	(1)Bring-up OSD Main Menu. (2)Select item for user adjustment.
Right (>)	(1)Item selection move upward or user-adjustable value increasing (in main menu). (2)Bring-up Audio/Video Menu (Direct-key function).
Left (<)	(1)Item selection move downward, user-adjustable value decreasing (in Main Menu) . (2)Auto Setup (Direct-key function, Analog input signal only).

Making the Connections

- Before connecting any cables, make sure that the computer and display are turn off.
- To connect the power and video signal cables:
1. Locate the AC power adapter with attached power cable.
 2. Connect the power cable to the power jack on the back of the display ("DC IN" as shown below).
 3. Plug the three-prong power cord into a power outlet, and plug the other end into the AC power adapter.



When using with a PC:

4. Plug the analog (or digital) video signal cable into the Analog (or Digital) Video Input port on the back of the display ("ANALOG IN" (or "DIGITAL IN") as shown above).
5. Connect the other end of the video cable into your computer's video port. (Please check your computer's documentation if you're not sure where the port is located.)
6. Connect the audio-mic cable (green) from "AUDIO1" port of the display to the line-out port of your PC and connect other wire (red) from "MIC" port of the display to the line-in port of your PC.

When using with AV devices (e.g., DVD/VCD-player,... etc.):

7. Plug the S-video signal (or CVBS) cable into the S-video (or CVBS) Input port on the back of the display ("S-VIDEO" (or "CVBS") as shown above).
8. Connect the other end of the video cable into your AV devices S-video (or CVBS) output port.
9. Connect the Two-wire audio cable from "AUDIO 2" port of the display to the audio output port (white plug connect to the "AUDIO L" and red plug connect to the "AUDIO R") of your AV device.

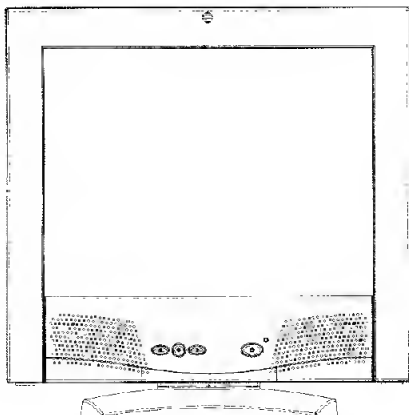
Note: *For best display performance, it is strongly recommended that you use Auto Setup to automatically configure your display's settings (only for Analog input).*

Using Your Display

This chapter contains information about using your LCD Monitor.

Turning the Display On and Off

Use the power button located at the lower right side of the front panel of the display to turn the display on and off. When the display is on, the light (LED) near the Power button is illuminated. The light is green when both the display and PC are active and amber when the display is in a reduced power mode.



If your PC supplies power saving signals to the display, the display's power management features reduce power consumption to low levels when your PC goes into its power-saving mode. See "Minimizing Power Consumption" on page 20 for more information.

If your PC doesn't use industry standard power-save signaling techniques, you can reduce power consumption by turning off the display when it won't be used for an extended period. You can turn the display off even if you leave your PC in running.

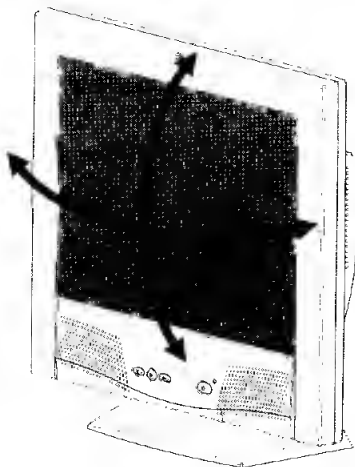
Note: *Because of the technology used in LCD panels, screen savers will not prolong the life of your display. So if the display will not be used for an extended period, be sure to turn it off.*

Warning

To completely disconnect power from your display, you must remove the power cord from the wall outlet and then remove the power cable from the display.

Tilting the Display

The monitors have a tilt feature that allows you to tilt the display back and forth as well as left and right to find the most comfortable viewing position. To tilt the display, grasp the sides and push the display back or pull it toward you, or turn it left or right until it is in the desired position. The display can be tilted 20° backward and 5° forward or 60° left and 60° right.



Note: *Do not tilt the display by grasping the top edge.*

Setting the Video Mode

Since the inherent format of this display is 1024 pixels by 768 lines, the display will perform best when your PC is set to a screen resolution of 1024 x 768. If you use a lower resolution (such as 640 x 480), the image is expanded to fill the screen.

Your display supports many common video modes, as shown in "Video Modes" on page 31. Check the documentation supplied with your PC and video adapter card to find out which modes they support.

To see what the video mode in your Microsoft Windows, please check Windows' settings in your PC.

Setting the Refresh Rate

The image *refresh rate* is the number of times per second that the image is refreshed; it is also known as the *vertical frequency*.

On standard CRT displays, we recommend that you should use the highest possible refresh rate supported by your PC at the current screen resolution. This is necessary to avoid screen flickering and to minimize eyestrain. However, with your LCD Monitor, flicker is not an issue. It is flick-free at all supported refresh rates.

The table in "Video Mode" on page 31 shows the image refresh rates supported by the display at different screen resolution. Although your LCD monitor supports up to 75 Hz for analog video input, we recommend that you use **60 Hz** refresh rate for best performance.

To set the refresh rate with a standard Windows installation, follow the steps mentioned in your Windows's or graphic card's user's manual.

Minimizing Power Consumption

Many PCs support industry standard power-save signaling techniques. Power management features reduce the display's power consumption after a period of keyboard inactivity.

When the display is in a power-saving mode, the screen is blank and the power indicator is amber. Pressing a key on the keyboard or moving the mouse restores the image in several seconds. Consult your PC documentation for information about setting the power-saving modes.

The display accepts the signals for the three standard power-saving modes – Standby, Suspend, and Sleep. For any of these conditions, the display will go into Sleep mode.

Caring for and Cleaning the Display

To maximize screen life and prevent damage to the LCD panel, we recommend that you:

- ⇒ Use the display power management system (if available on your PC).
- ⇒ If you don't use a power management system, turn off the display when you won't be using it for an extended period.
- ⇒ Don't press, rub, or poke the display with your finger or other object.
- ⇒ Handle your display with care.

Your LCD module is a high-quality optical device that requires special care when cleaning.

Warning

Don't use liquid, aerosol, or abrasive cleaning solutions to clean the screen.

To clean the screen:

1. Shut down the PC.
2. Turn off and unplug the display.
3. Gently dust the screen with a dry, soft, line-free cloth.

Note: *If the screen is still dirty, you can dampen the cloth with several drops of distilled water. Make sure the LCD panel is completely dry before you turn the display back on.*

4. Plug in the display.
5. Turn on your PC and display.


Adjusting Your Display

This chapter contains information about how to changing display settings for your LCD Monitor. It is designed with an OSD menu to help you easily adjust to its optimum performance.


Note: *You must perform auto setup before making any adjustment.*

Summary of Control Buttons


There are three control buttons located at the lower part of the front panel of your display:

⇒ **Select** (): Display the On-Screen Display (OSD) "**Main Menu**" and selects items for user adjustment.

Note: *Hold down this key for 2 seconds will clear OSD menu.*

⇒ **Right** (): Move upward through the choice in the OSD submenu. If an adjustment bar is displayed, this button increases the setting value.

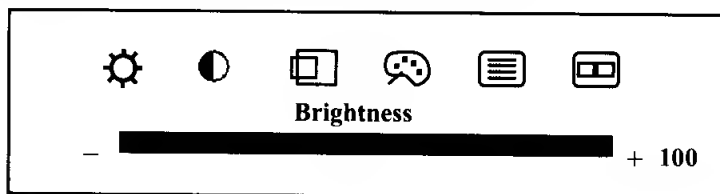
Note: *This key is also used as 'direct key' to bring-up OSD "Audio/Video".*

⇒ **Left** (): Move downward through the choice in the OSD submenu. If an adjustment bar is displayed, this button decreases the setting value.

Note: *This key is also used as 'direct key'. When the OSD "Main Menu" is inactive, press this key will bring-up 'Auto Setup' submenu.*

Displaying the OSD "Main Menu"

You can use the OSD features to change the screen settings of your display. To display the OSD "**Main Menu**", please press the '**Select**' button.



The following table briefly describes each of the items in the OSD **"Main Menu"**.

Item	Description
Brightness	Controls the brightness of the display by adjusting the light output of the backlight. The default setting of brightness is at maximum.
Contrast	Adjust the level of difference between light and dark areas of the image. you can use the Contrast item to adjust the contrast which you like. The default setting of contrast is at 50.
Display	Open the "Display" submenu where you can select horizontal (H.) or vertical (V.) position for further adjustment.
Color	Open the "Color" submenu where you can select Color Temperature, Luminance, Hue, and Color for further adjustment. See "Doing Adjustment in the OSD Menu" on page 22.
Clock/Phase	Open the "Clock/Phase" submenu where you can do Auto Setup or select Clock or Phase for further adjustment.
Management	Open the "Management" submenu where you can select to display mode information (Mode Info), select OSD Display, select scale/center, choose language you preferred, select input signal (source), and recall factory settings for further adjustment. See "Doing Adjustment in the OSD Menu" on page 22.

Selecting Items in the OSD Menu

To select items in the OSD **"Main Menu"**, you will use the **'Select'** button on the front panel of the display.

To select items in the OSD submenus, you will use all three control buttons. To select a specific submenu, you shall use **'Select'** button to move forward to the item corresponding to that submenu. Then you can choose any item in that submenu by using **'Right'** or **'Left'** buttons, and then select it by press **'Select'** button.

Doing Adjustment in the OSD Menu

Adjusting the Brightness Setting

To adjust Brightness setting you should follow the steps below:

1. Bring-up the OSD **"Main Menu"**.
2. The brightness icon should be highlighted (to red) already.
3. Use **'Right'** and **'Left'** buttons to adjust its value. The range for adjustment is from 0 to 100. **'Right'** button will increase the Brightness setting and **'Left'** will decrease it.

Adjusting the Contrast Setting

To adjust Contrast setting you should follow the steps below:

1. Bring-up the OSD "**Main Menu**".
2. Use '**Select**' button to move forward to the contrast icon and highlight it.
3. Use '**Right**' and '**Left**' button to adjust its value. The range for adjustment is from 0 to 100. '**Right**' button will increase the Contrast setting and '**Left**' will decrease it.

Adjustment in the "Display" submenu

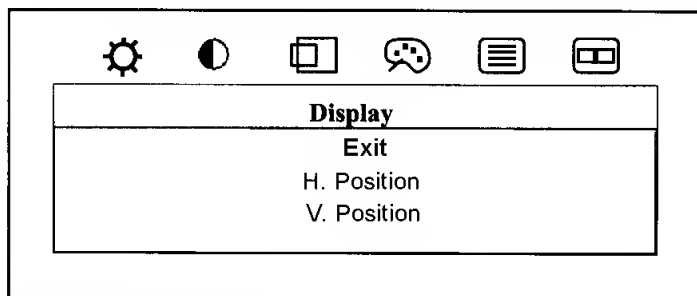
To adjust Display settings you should follow the steps below:

1. Bring-up the OSD "**Main Menu**".
2. Use '**Select**' button to move forward to 'Display' icon and highlight it. This will bring-up the "**Display**" submenu. There are three items for your choice in this submenu: Exit, H. Position and V. Position.
3. Use '**Right**' and '**Left**' keys to choose the item you need and then press '**Select**' to highlight and select it.

If 'Exit' is selected, it will exit the "**Display**" submenu and forward to the next item in the "**Main Menu**". (i.e., Color icon.)

If 'H. Position' is selected, then you can adjust it by '**Right**' and '**Left**' buttons. '**Right**' button will move the image to the right and '**Left**' button will move the image to the left.

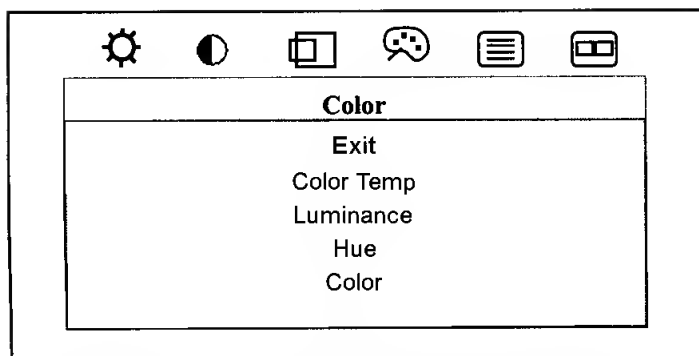
If 'V. Position' is selected, then you can adjust it by '**Right**' and '**Left**' buttons. '**Right**' button will move the image upward and '**Left**' button will move the image downward.



Adjustment in the "Color" submenu

To adjust Color settings you should follow the steps below:

1. Bring-up the OSD "**Main Menu**".
2. Use '**Select**' button to move forward to 'Color' icon and highlight it. This will bring-up the "**Color**" submenu. There are five items for your choice in this submenu: Exit, Color Temp, Luminance, Hue, and Color.
3. Use '**Right**' and '**Left**' buttons to choose the item you need and then press '**Select**' to highlight and select it.



If 'Exit' is selected, it will exit the "Color" submenu and forward to the next item in the "Main Menu". (i.e., Clock/Phase icon.)

If 'Color Temperature' is selected, it will bring-up "Color Temp" submenu. Use 'Right' and 'Left' buttons to activate one of the three options: Cool, Neutral and Warm. For optimum viewing in your LCD monitor, we recommend you to use the Neutral option.

Note: *As you choose an item, your screen will immediately updates to reflect this setting.*

If 'Luminance' is selected, use 'Right' and 'Left' button to adjust its value. The range for adjustment is from 0 to 100. 'Right' button will increase the Luminance setting and 'Left' will decrease it. It will adjust the light of the color.

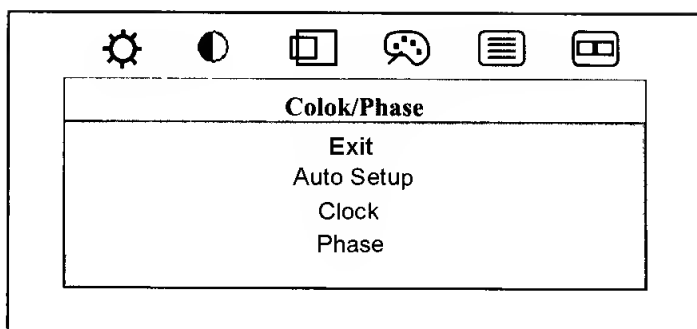
If 'Hue' is selected, use 'Right' and 'Left' button to adjust its value. The range for adjustment is from 0 to 100. 'Right' button will increase the Hue setting and 'Left' will decrease it. It will adjust the phase of the color.

If 'Color' is selected, use 'Right' and 'Left' button to adjust its value. The range for adjustment is from 0 to 100. 'Right' button will increase the Color setting and 'Left' will decrease it. It will adjust the saturation of the color.

Adjustment in the "Clock/Phase" submenu

To adjust Clock and Phase settings you should follow the steps below:

1. Bring-up the OSD "Main Menu".
2. Use 'Select' button to move forward to Clock/Phase icon and highlight it, this will bring-up the "Clock/Phase" submenu. There are four items for your choice in this submenu: Exit, Auto Setup, Clock and Phase.
3. Use 'Right' and 'Left' buttons to choose the item you need and then press 'Select' to highlight and select it.



If 'Exit' is selected, it will exit the "**Clock/Phase**" submenu and forward to the next item in the "**Main Menu**". (i.e., Management icon.)

If 'Auto Setup' is selected, it will execute 'Auto Setup' function. Please refer to '**Auto Setup by Direct Key**' on page 27 for more detail information.

If 'Clock' is selected, then you can adjust it by '**Right**' and '**Left**' buttons. '**Right**' button will increase the number of pixels per line and '**Left**' button will decrease the number of pixels per line.

Note: *We recommend you do Auto Setup first. And adjusting the clock setting only if the image looks incorrect.*

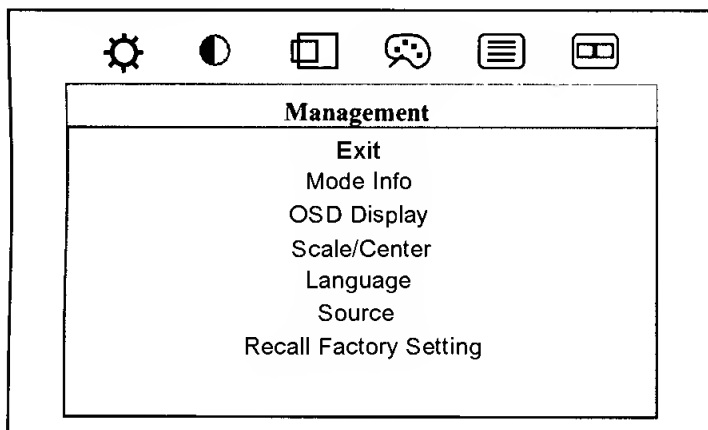
If 'Phase' is selected, then you can adjust it by '**Right**' and '**Left**' buttons.

Note: *We recommend you do Auto Setup and to see whether the phase needs to adjust or not.*

Adjustment in the "Management" submenu

To adjust Management settings you should follow the steps below:

1. Bring-up the OSD **"Main Menu"**.
2. Use '**Select**' button to move forward to Management icon and highlight it. This will bring-up the **"Management"** submenu. There are seven items for your choice in this submenu: Exit, Mode Info, OSD Display, Scale/Center, Language, Source and Recall Factory Setting.
3. Use '**Right**' and '**Left**' keys to choose the item you need and then press '**Select**' to highlight and select it.



If 'Exit' is selected, it will exit and close the OSD.

If 'Mode info' is selected, it will show-up **"Mode Info"** submenu with resolution, H. and V. frequency information displayed in it.

If 'OSD Display' is selected, it will bring-up **"OSD Display"** submenu. Use '**Right**' and '**Left**' buttons to highlight and '**Select**' key to select H. or V. Position. This will show-up the corresponding bar on menu, and you can adjust its setting by '**Right**' and '**Left**' buttons. '**Right**' button will move the OSD menu to the right or upward, and '**Left**' button will move the OSD menu to the left or downward.

If 'Scale/Center' is selected, it will bring-up **"Scale/Center"** submenu. Use '**Right**' and '**Left**' buttons to highlight and activate Center, Maintain Aspect Ratio, or Full Screen. In general, full screen is preferred for using.

Note: As you choose an item, your screen immediately updates to reflect this setting.

If 'Language' is selected, it will bring-up **"Language"** submenu. Use '**Right**' and '**Left**' buttons to highlight and '**Select**' key to activate the language you preferred and exit this submenu.

If 'Source' is selected, it will bring-up **"Source"** submenu. Use '**Right**' and '**Left**'

buttons to highlight and switch Analog, Digital, S-Video or Video input signal. If your selected input signal is missing it will search next input signal by automatic until get available. The searched sequence by '**Left**' button is downward, and by '**Right**' button is upward. When Analog or Digital has selected the Audio1 will activate and Audio2 will be disabled. And when the S-Video or Video has selected the Audio2 will activate and Audio1 will be disabled.

Note: As you choose an item, your display immediately updates to reflect this setting.

If 'Recall Factory Setting' is selected, it will bring-up "**Recall Factory Setting**" submenu with 'Yes' and 'No' prompt for your confirmation. Use '**Right**' and '**Left**' buttons to choose and '**Select**' button to make your confirmation for return back factory settings or not.

Using the Direct Keys

There are two direct keys that function while OSD "**Main Menu**" is inactivated. The two direct keys are for bringing-up OSD "**Auto Setup**" and "**Audio/Video**" submenu.

Auto Setup by Direct Key

Use Auto Setup whenever you apply a new video mode or change the refresh rate. While the Auto Setup routine is running, you should have a stable image displayed on the screen. Do not move items around the screen, play games, or view video during Auto Setup.

Once you have executed Auto Setup for a particular mode, the display will store the new values in its permanent memory.

Auto Setup	
Yes	No

To execute Auto Setup:

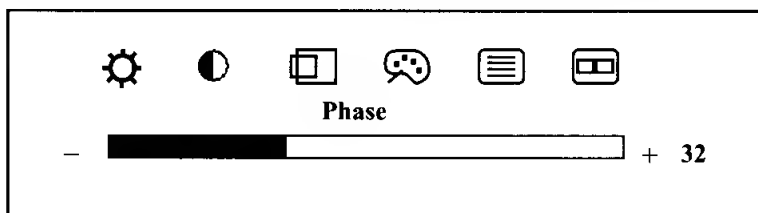
1. Press '**Left**' button with no OSD "**Main Menu**" displayed on screen, this will show up "**Auto Setup**" submenu.
2. Use '**Right**' or '**Left**' buttons to choose **Yes** and press '**Select**' key to activate Auto Setup.

The image will be muted during the Auto Setup routine running. After the routine is complete, you are asked whether the image appears correct or not.

Auto Setup	
Does this image look correct?	
Yes	No

3. If the image looks correct, choose **Yes**, and then the submenu will close automatically.
OR

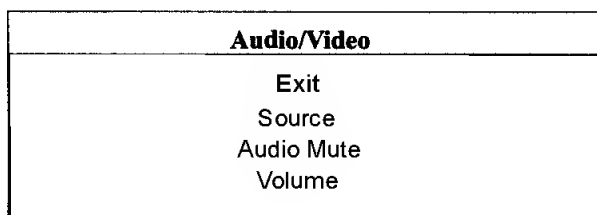
If the image requires further adjustment, choose **No**, it will shown up 'Phase' bar for your further adjustment by manual. Then you can adjust the phase by '**Right**' or '**Left**' buttons. When all text appears well focused and **there** is no instability in the image, press the '**Select**' key to end the adjustment and close the OSD menu.



Audio/Video Adjust by Direct Key

To adjust Audio and Video:

1. Press '**Right**' button with no OSD "**Main Menu**" displayed on screen, this will show up "**Audio/Video**" submenu.
2. Use '**Right**' and '**Left**' keys to choose the item you need and then press '**Select**' to highlight and select it.



If 'Exit' is selected, it will exit and close the OSD.

If 'Source' is selected, it will bring-up "**Source**" submenu. The description refer to page 26.

If 'Audio Mute' is selected, it will bring-up "**Audio Mute**" submenu with 'Yes' and 'No' prompt for your confirmation. Use '**Right**' and '**Left**' buttons to choose and '**Select**' button to make your confirmation for mute audio output or not.

Note: *As you choose an item, your display immediately updates to reflect this setting.*

If 'Volume' is selected, use '**Right**' and '**Left**' button to adjust its value. The range for adjustment is from 0 to 100. '**Right**' button will increase the Volume setting and '**Left**' will decrease it.

Troubleshooting

This chapter contains information about how to troubleshoot your LCD Monitor. If you have tried all of the items listed below, please contact a qualified service personnel.

A. My display doesn't work, even though the computer appears to work.

1. Make sure the power cable is securely plugged into the display.
2. Make sure the display is turned on.
3. Try turning the display off and then turning it on again.
4. Make sure the display's power cord is plugged into a power outlet and into the AC power adapter. Check to see whether the outlet works by plugging another device (such as a lamp) into the outlet. (If the light on the front of the display is lighted, it is getting power. Try the next item on this procedure.)
5. Check the cable connection between the display and the computer. The cable connectors must be pushed in all the way.

B. The message "Check Cable" appears on my display.

This message appears when the video cable is not properly connected to the computer.

1. Make sure the analog video cable is plugged into the Analog Video Input port on the back of the display.
2. Make sure the other end of analog video cable is plugged into the PC's video port.

C. The image is very unstable.

1. Set your PC to a supported video mode, preferably 1024 x 768 at 60 Hz. See "Setting the Video Mode" on page 19.
2. Restore the original factory settings by choosing **Recall Factory Setting** in the OSD "Management" submenu.
3. Perform the Auto Setup function. See "Auto Setup by Direct Key" on page 27.

Note: *Even if your PC's setting is out of the range of video modes that are supported by your LCD monitor, it may still be displayed with reduced quality. This provides you with an opportunity to change your PC's setting to a correct one.*

Technical Information

This chapter contains technical information about your LCD Monitor.

Display Information

LCD Module	15-in (38.1 cm), active matrix TFT, anti-glare coating, 0.297 mm pixel pitch
Display Size	304.1 mm x 228.1 mm
Viewing Angle	
Left/Right	-65° ~ 65°
Up/Down	-60° ~ 50°
Luminance	300 cd/m ² (Typical)
Contrast Ratio	500 : 1 (Typical)
Display Colors	16 Millions
Power Input	100 ~ 240 V _{AC} Full Range, 50/60 Hz < 1.2 A @ 110V; < 0.6 A @ 230V
Maximum power consumption	< 40W
Signal Input	
Video Signal	Analog: RGB positive 0.7V _{PP} , 75 Ω
Sync signals	Separate, TTL Level
	Digital: TMDS 0.3Vp-p differential
	Video: NTSC / PAL S-video & Composite
Line (horizontal) frequency	Analog: 31.5 kHz ~ 60 kHz Digital: 31.5 kHz ~ 48.4 kHz Video: 15.625 / 15.734 kHz
Raster (vertical) frequency	Analog: 56 Hz ~ 75 Hz Digital: 60 Hz Video: 50 / 60 Hz
Pixel dot clock	79 MHz (maximum)
Recommended mode	1024 x 768 @ 60 Hz
Pedestal tilt	30° forward, -5° backward 60° right, 60° left
Dimensions (W x H x D)	376 x 381 x 204 mm
Net weight	5.1 kg

Grass weight 6.8 kg

**Operating
Conditions**

Temperature 5° ~ 40°C at altitude 0 ~ 2000m
5° ~ 30°C at altitude 2000 ~ 3000m

Humidity 20% ~ 85% RH, non-condensing

Altitude 3000m Max.

Storage Conditions

Temperature -20° ~ 60°C

Humidity 5% ~ 95% RH

Altitude 10000m Max.

Video Modes

Your LCD monitor supports the following industry-standard combinations of screen resolution and refresh rates. Other combinations are possible, but may require adjustments to the image.

For optimum performance, set your PC to a screen resolution of 1024 x 768 at a 60 Hz refresh rate.

Analog:

Supported Resolution (dots x lines)		Vertical Frequency (Refresh Rate)
VGA	640 x 350	70 Hz
	640 x 480	60 Hz
	640 x 480	72 Hz
	640 x 480	75 Hz
SVGA	800 x 600	56 Hz
	800 x 600	60 Hz
	800 x 600	72 Hz
	800 x 600	75 Hz
XGA	1024 x 768	60 Hz
	1024 x 768	70 Hz
	1024 x 768	75 Hz
US TEXT	720 x 400	70 Hz
Power MAC	640 x 480	67 Hz
	832 x 624	75 Hz

Digital:

Supported Resolution (dots x lines)		Vertical Frequency (Refresh Rate)
VGA	640 x 480	60 Hz
	640 x 480	75 Hz
SVGA	800 x 600	60 Hz
	800 x 600	75 Hz
XGA	1024 x 768	60 Hz

Video:

Supported Resolution (lines x horizontal frequency)			Vertical Frequency (Refresh Rate)
NTSC	M	525 x 15.734 kHz	60 Hz
PAL	B/G/H/I/ D/K	625 x 15.625 kHz	50 Hz

Note: *The display is capable of going beyond these recommended modes.*

Unknown Video Modes

Like all other monitors, the your LCD monitor is designed to work with standard video modes. However, not all video/graphic cards use only standard display modes.

Your LCD monitor uses state-of-the-art technology, which is designed to synchronize to any display mode. We recommend choosing one of the supported modes listed above. If you choose an unknown mode, you will need to manually adjust the clock, phase, and image position.

If you must use an unknown mode, you can run Auto Setup at first. If Auto Setup doesn't provide adequate image adjustment, then you must manually adjust the clock, phase, horizontal position, and vertical position.

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